

## LIVER TIPS ULTRASOUND

Check for free fluid in 4 quadrants.

Color Doppler of Hepatic Veins.

Spectral Doppler of Hepatic Veins.

Color Doppler of LPV & RPV.

Spectral Doppler of LPV & RPV. (Document the direction of flow as it will *reverse* or travel towards the shunt as the TIPS provides a route of decreased flow resistance.)

Color Doppler of MPV.

Spectral Doppler of MPV. (Normal = > 30 cm/s) Velocity increases after TIPS. Doppler angle should be 45-60 degrees.

TIPS -Obtain peak velocity in portal end, mid and hepatic end of shunt (Normal = 90-190 cm/s). Doppler angle should be 45-60 degrees and during normal patient respiration.

Color & spectral Doppler of Hepatic Artery. Measure peak & end diastolic flow. (After TIPS placement there will be an increase flow.)

Do not need to document spleen size or evaluate splenic vein.